

From: Kleppinger, Jeff
Sent: Thursday, February 13, 2014 10:56 AM
To: Rochlin, Kevin
Cc: Ordine, Charles
Subject: RE: CD needed
Attachments: 899443.pdf

OK. I will get it done shortly.

I was just on the phone with Charles Ordine. He mentioned the 1998 ROD AR and an action memorandum for gas extraction—RCRA Pond.

Is the attached action memo what you were looking for? I am still checking on the AR.

Jeff

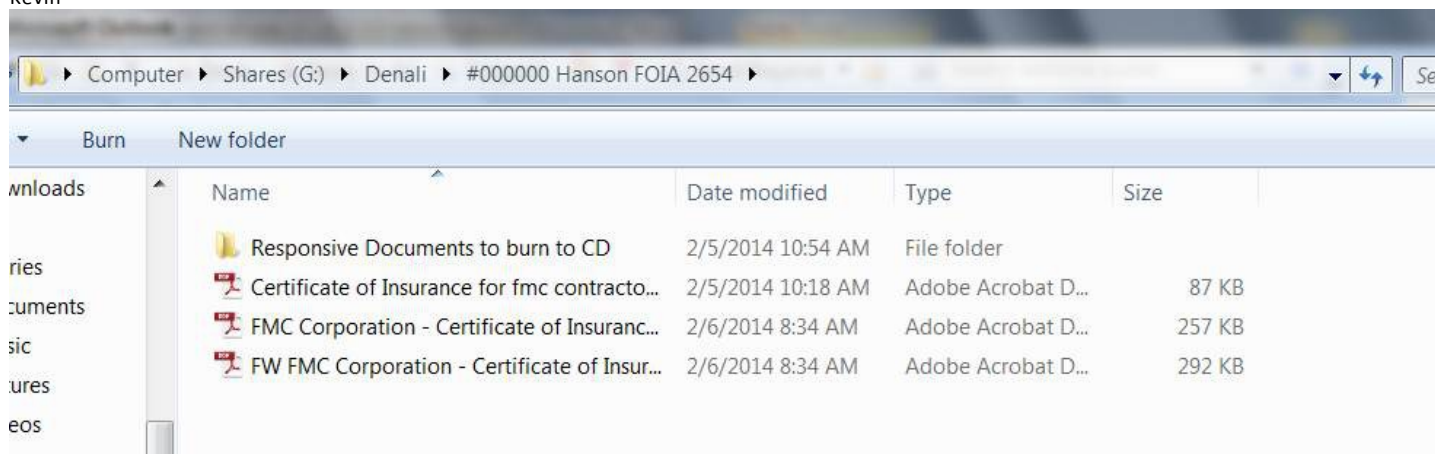
From: Rochlin, Kevin
Sent: Thursday, February 13, 2014 9:24 AM
To: Kleppinger, Jeff
Subject: CD needed

Jeff,

Can you burn me a copy of the "Responsive documents to burn to CD file"?

Thanks.

Kevin



From:

Kevin Rochlin | Superfund Remedial Project Manager
U.S. Environmental Protection Agency | Region 10
Office of Environmental Cleanup
1200 6th Avenue, Suite 900, ELC-111 | Seattle, WA 98101
(206) 553-2106
(206) 553-0124 (fax)
rochlin.kevin@epa.gov



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
IDAHO OPERATIONS OFFICE
1435 N. Orchard St.
Boise, Idaho 83706

June 10, 2010

ACTION MEMORANDUM

SUBJECT: Request for Approval of Time-Critical Removal Action at FMC RCRA Ponds, Pocatello, Idaho

FROM: Greg Weigel *Andrew M. Smith*
On-Scene Coordinator *Far*

TO: Daniel D. Opalski, Director
Office of Environmental Cleanup

THRU: Chris D. Field, Unit Manager *Ce D Field*
Emergency Response Unit

SSID: 10JC

I. PURPOSE

The purpose of this Action Memorandum is to request and document approval of the selected removal action described herein for certain hazardous waste management units (referred to as "ponds") located at the FMC facility ("Site") in Power County, Idaho. The proposed time-critical removal action is expected to be conducted by FMC according to the requirements of an anticipated Unilateral Administrative Order pursuant to Section 106(a) of CERCLA.

II. SITE CONDITIONS AND BACKGROUND

The CERCLIS ID# for the Eastern Michaud Flats NPL site, of which the FMC facility is a part, is IDD984666610. The Resource Conservation and Recovery Act (RCRA) ID# for the FMC Site is IDD070929518.

A. Site Description

1. Removal site evaluation

The Site is owned and operated by FMC Idaho LLC, which is a wholly owned subsidiary of FMC Corporation (collectively referred to as "FMC"). The Site was used to manufacture elemental phosphorus from phosphate ore from the late 1940s until December 2001. After 2001, FMC decommissioned and dismantled the manufacturing plant.

The Site contains hazardous waste surface impoundments (called "ponds") that were capped and closed under RCRA (See Figure 1). Pond 16S is currently under a CERCLA Order for time-critical removal action. RCRA ponds that are part of the Site for the purposes of this removal action are (from east to west) Pond 8S, Pond 8E, Pond 11S, Pond 12S, Pond 13S, Pond 14S, Pond 15S, Pond 17 and Pond 18A (hereinafter referred to as the RCRA Ponds).

On October 16, 1998, the United States filed a Complaint against FMC in U.S. District Court alleging a number of RCRA violations at the FMC site, including the allegation that FMC placed reactive and ignitable phossy wastes in hazardous waste ponds. A Consent Decree entered on July 13, 1999, required FMC, among other things, to close and cap Pond 8S, Pond 8E, Pond 11S, Pond 12S, Pond 13S, Pond 14S, Pond 15S and Pond 16S in accordance with all applicable RCRA requirements and EPA approved closure plans. FMC certified that it had completed closure of these ponds in accordance with the approved closure plans between October 1999 and January 2005.

Since 2006, phosphine gas has been detected in and around a number of the RCRA Ponds. On December 14, 2006, EPA issued a Unilateral Administrative Order to FMC pursuant to Section 106(a) of CERCLA. The Order required FMC to, among other things, extract and treat gas from under the Pond 16S cap to protect receptors from inhalation of phosphine and other hazardous gases being released from Pond 16S at hazardous levels.

On August 22, 2007, FMC reported to EPA that phosphine gas was detected within temperature monitoring point (TMP) enclosures at Ponds 8E, 11S, 12S, 13S, 15S, 16S, and 17.¹ TMPs are well casings that penetrate the RCRA cap to just above the waste layer, and provide a direct pathway for gas to migrate through the cap to the surface. TMP well heads have an enclosure around them in which phosphine gas leaking through the TMPs can accumulate. In 2008, FMC installed gaskets or seals at the flanges of 50 of the TMPs to control leakage of phosphine gas.

However, phosphine gas continued to be detected outside of the cap at a number of the ponds. In 2009, on six occasions at Pond 15S phosphine gas was detected in air above 1 ppm requiring workers to leave the area.² Phosphine gas was also detected in air

¹ Email from Jim Sieverson to Mark Masarik, August 22, 2007.

² FMC Report on Phosphine at FMC Pond 15S, FMC Corporation, April 26, 2010.

outside of TMP enclosures at Ponds 17 and 8E. In September of 2009, concentrations as high as 20 ppm were recorded at Pond 17 outside of the TMP enclosure, and as high as 17 ppm at Pond 8E in December 2009. Additionally, phosphine concentrations measured at TMP sampling ports on Ponds 17 and 8E have, since December 2009, been recorded at over 1,000 ppm (the upper detection limit of FMC's phosphine monitors used for TMP monitoring is 1,000 ppm).

On April 14, 2010, FMC reported that they were "...commencing gas extraction at Pond 15S to address a potential industrial hygiene issue ..."³ In response to an EPA request for additional information, FMC reported on April 26, 2010, that on three instances in 2009, electricians and/or technicians noted that PH₃ was detected at levels greater than 1.0 ppm upon opening the Pond 15S temperature/pressure instrument panel, thus requiring the electrician/technician to leave the area. To minimize this industrial hygiene exposure, FMC installed gas-sealing fittings on the temperature/pressure instrument panel, which FMC reports were designed to seal the conduit to prevent transport of gases. FMC has reported that this appeared to reduce the PH₃ exposure from within the temperature and pressure instrument panel. In December 2009, they began utilizing two small mobile gas extraction units to evacuate and treat high and increasing concentrations of phosphine gas in a lift station manhole confined space that needed to be accessed to perform regular maintenance activities per RCRA post-closure requirements.⁴ Concentrations of phosphine gas in the manhole confined space were frequently recorded above the concentration that is immediately dangerous to life and health (the NIOSH IDLH for phosphine is 50 parts per million).

According to FMC's Report on Phosphine at FMC Pond 15S, as concentrations continued to increase in the manhole at Pond 15S, FMC began regular monitoring of ambient breathing zone air concentrations around the lift station. Concentrations in unconfined breathing zone air were recorded at greater than 20 parts per million (ppm) phosphine (the upper detection limit of FMC's phosphine gas monitors is 20 ppm – the actual concentration above 20 ppm is unknown). On April 16, FMC began gas extraction and treatment at Pond 15S of source gas from under the Pond 15S cap – extracting gas from an existing perimeter perforated piping system that is directly under the cap liner. Phosphine gas concentrations extracted from the perimeter piping system since FMC began gas extraction on April 16 through April 23, 2010, averaged about 50,000 ppm.⁵ On May 7, 2010, FMC reported that the average phosphine concentration in gas extracted from the perimeter piping system was "significantly lower."⁶ Data show concentrations averaging about 30,000 ppm from April 28 through May 6, 2010.

No independent EPA field data has been collected at the FMC Ponds since EPA conducted removal site evaluation sampling at Pond 16S in November and December of 2006. However, information and data reported to date by FMC provides enough

³ Draft Pond 16S amended RCRA Post-Closure Plan and update on RCRA Post-Closure Maintenance Work, FMC Corporation, April 14 2010.

⁴ FMC Report on Phosphine at FMC Pond 15S, FMC Corporation, April 26, 2010.

⁵ FMC Report on Phosphine at FMC Pond 15S, FMC Corporation, April 26, 2010.

⁶ Email (with attachments) from Barbara Ritchie to Carla Fisher, May 7, 2010.

information to conclude that phosphine gas under the RCRA caps at Ponds 15S, 17 and 8E is being generated and has accumulated at very high concentrations. Phosphine gas has been released and may continue to be released to ambient air from these ponds at concentrations that may present an imminent and substantial endangerment to site workers or other persons or animals that may enter the area.

In addition, other RCRA-closed ponds contain high concentrations of phosphine gas that could present a threat of release. Monitoring of TMP sampling ports (of source gas from under the RCRA cap) from April 2007 through March 2010 show phosphine concentrations exceeding 1,000 ppm in several other ponds in addition to 15S, 17 and 8E.⁷ Experience at Pond 16S and 15S demonstrate that high concentrations of phosphine gas at other RCRA Ponds could also present a threat of release and potential exposure and endangerment to site workers or other persons or animals that may enter the area.

2. Physical location

The FMC facility is located in Southeastern Idaho on Highway 30, approximately 2.5 miles northwest of Pocatello, Idaho, in Township 6 South, Range 33 East (see Figure 2). Access to the RCRA Ponds is via a private gated and locked access road. The RCRA Ponds are approximately ½ mile to the west from the main FMC entrance, off of East County Road. The Pond 15S coordinates are latitude 42.9000N, and longitude -112.5540W. Pond 17 coordinates are latitude 42.8992N, and longitude -112.5605W. The Pond 8E coordinates are latitude 42.9005N, and longitude -112.5476W. The Site elevation is approximately 4,490 feet above sea level.

The RCRA Ponds are within the boundary of the Fort Hall Reservation and are owned in fee by FMC Idaho LLC. Fort Hall Reservation land in the vicinity of the FMC Site is both agricultural and residential. Directly east of the Site is the Simplot Don fertilizer manufacturing facility. Northeast of the Site approximately 1.25 miles is a large Chevron bulk petroleum storage and distribution facility. Directly north of and adjacent to the FMC northern fence line runs a Union Pacific Railroad line and siding. North of the rail line is Highway 30. Northwest of the Site approximately 1.25 miles is the Pocatello Regional Airport. Bureau of Land Management (BLM) lands in the vicinity of the Site are designated for multiple uses. Unincorporated land in Bannock and Power Counties in the vicinity of the Site is mostly agricultural with scattered residences. Potential receptors of phosphine released from the RCRA Ponds include FMC's employees, contractors and subcontractors, as well as visitors or trespassers. Potential receptors at or near facility boundaries include: Union Pacific Railroad workers and contractors; Power County road workers and contractors; utility workers and contractors at Highway 30, including Idaho Power employees and their contractors that service an electrical substation located a short distance to the south of the FMC RCRA Ponds; visitors and staff at FMC administrative offices on Weaver Road; recreational users on Highway 30, including bicyclists and pedestrians; and members of the Shoshone-Bannock Tribes.

⁷ FMC Report on Phosphine at FMC Pond 15S, FMC Corporation, April 26, 2010.

The Site is located within a sage-steppe vegetation ecosystem. The Portneuf River flows approximately 1 mile west of the FMC Ponds. There are no known threatened or endangered species on the Site. However, the Federally listed gray wolf and bald eagle have been identified in areas surrounding the Site.⁸

3. Site characteristics

All RCRA Ponds at the Site have a RCRA engineered cap and all received phosphorous containing wastes. A description of the RCRA Ponds is included in Figure 3 – Description of RCRA Ponds.

The RCRA ponds were capped with phosphorus containing waste in place. Remaining solids include fine-grained furnace solids (ore, coke and silica), elemental phosphorus from the precipitators used in manufacturing, and residual sludge and dirt contained in phosphy water after processing at the phosphorus loading dock. FMC has certified that all of the RCRA Ponds have been closed in accordance with closure plans approved by EPA. The approved closure plans required removal of water and placement of a cap over the waste. The closure plans also required a dual purpose pressure monitoring and gas collection system to be installed under the caps around the perimeter of the ponds. Temperature monitoring sensors were installed in well casings called temperature monitoring points or TMPs extending down through the cap to locations above the waste to monitor temperature.

There are no remaining operations or structures at the Site related to phosphorus production. There are FMC workers and contractors at the Site on a daily basis for operation of the Pond 16S gas extraction and treatment system, and for other monitoring, site investigation and maintenance activities. There are a minimum of two workers on Site during daytime hours, and frequently many more, as needed.

4. Release or threatened release into the environment of a hazardous substance, or pollutant or contaminant

Phosphine is a hazardous substance as defined by sections 101 (14) of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 U.S.C. section 9601(14). Phosphine gas has been released to ambient air from Pond 15S at concentrations in excess of 20 ppm (FMC's phosphine monitors used for industrial hygiene monitoring have an upper detection limit of 20 ppm). Monitoring of air outside of TMP enclosures at Ponds 17 and 8E have shown concentrations of 1 ppm or greater. Extensive monitoring for releases of phosphine at other RCRA Ponds has not been conducted, but high concentrations of phosphine under the RCRA cap at other ponds and potential pathways for release provide conditions for a threatened release of phosphine to ambient air, which requires monitoring to ensure the protection of public health and the environment. The potential pathways include releases through TMPs, through instrument

⁸ BLM Pocatello Proposed Resource Management Plan and Final Environmental Impact Statement (April 2009).

panel enclosures (that are connected to TMPs by conduit), and by gas diffusion through soils at the edge of the cap liner.

Since 2007, phosphine concentrations have been measured in gases from TMP sample ports exceeding 1,000 ppm (FMC's phosphine detection monitors used for TMP monitoring have an upper detection limit of 1,000 ppm) in Ponds 8E, 17, 18A, 12S, 11S, and 15S. At Pond 15S, the concentration of phosphine gas at the inlet to the mobile gas extraction system has been calculated as high as 100,000 ppm.

The Occupational Safety and Health Administration (OSHA) permissible exposure limit (PEL) is 0.3 ppm as an 8-hour time-weighted average. The National Institute for Occupational Safety and Health (NIOSH) short-term exposure limit (STEL) for phosphine is 1 ppm. This is a 15-minute time weighted average concentration that should not be exceeded during any part of a workday. NIOSH has established 50 ppm as the immediately dangerous to life and health (IDLH) concentration for phosphine gas. The IDLH is the concentration that could result in death or irreversible health effects, or could prevent the exposed individual from escaping. Both the OSHA PEL and the NIOSH STEL have been exceeded in ambient air at the Site.

The National Advisory Committee for the Development of Acute Exposure Guideline Levels for Hazardous Substances (AEGL Committee) has developed Acute Exposure Guideline Levels (AEGLs) for hazardous chemicals. These levels are threshold exposure limits for the general public and are applicable to emergency exposure periods ranging from 10 minutes to 8 hours. AEGL 2 concentrations are airborne concentrations of a substance above which it is predicted that the general population, including susceptible individuals, could experience irreversible or other serious, long-lasting adverse health effects or an impaired ability to escape. The AEGL 2 phosphine level for 10 minute emergency exposure is 4.0 ppm, and the 8-hour AEGL 2 level is 0.25 ppm. Both 10 minute and 8-hour AEGL 2 levels are being exceeded in ambient air at the Site.

5. NPL status

The FMC site is part of the Eastern Michaud Flats (EMF) Superfund site that was listed on the CERCLA National Priorities List (NPL) on August 30, 1990, (Federal Register, Volume 55, Number 169, page 35502). The RCRA Ponds are being addressed under RCRA and are not part of the CERCLA site being addressed by the remedial action program. Within the EMF Superfund site are the FMC Site and the J.R. Simplot Company "Don" Plant. EPA issued a CERCLA Record of Decision (ROD) selecting a remedy for the EMF site in 1998. EPA is reevaluating the ROD as it pertains to the FMC CERCLA site (but not to the RCRA Ponds). FMC is conducting a Supplemental Remedial Investigation and Feasibility Study pursuant to a CERCLA Administrative Order on Consent, which includes an investigation of former FMC plant operating areas that were in operation and not evaluated at the time of EPA's original site investigation.

6. Maps, figures and other graphic representations

See attached Figures 1, 2 and 3 for Layout of RCRA Ponds, Regional Setting and Description of RCRA Ponds.

B. Other Actions to Date

1. Previous actions

On December 14, 2006, EPA issued a Unilateral Administrative Order (Order) to FMC in order to address high concentrations of toxic gasses at Pond 16S that on several occasions had ignited within TMPs, causing a release of white smoke, believed to be phosphorus pentoxide, a product of the combustion of phosphine in air. An EPA removal site evaluation confirmed high concentrations of phosphine under the cap, as well as elevated concentrations of hydrogen cyanide and hydrogen sulfide. The Order required FMC to characterize gasses under the cap, extract and treat gasses from Pond 16S TMPs to safe levels, and conduct monitoring to determine the nature and extent of any releases of gas at and around Pond 16S. The Order also required FMC to continue to monitor and operate the gas extraction and treatment system (GETS) for one year after they have achieved the target concentration for gasses extracted from under the cap. FMC achieved the target concentrations of 10% of the phosphine lower explosive limit (LEL), or 2,000 ppm phosphine under the cap and began the one year demonstration period in November, 2009. The target concentration, as measured in Pond 16S TMPs, must be maintained for one year to satisfy the requirements of the Order.

On August 22, 2007, EPA requested data relating to gas generation at other RCRA ponds.⁹ FMC provided monitoring data for 54 of the 58 TMPs on all of the RCRA Ponds. The data showed phosphine gas accumulation within TMP housings at a majority of the TMP enclosures. FMC subsequently installed flange gaskets or used silicone to “seal” the TMPs and mitigate releases of phosphine.

2. Current actions

EPA is working on modifications to the post-closure plans for the RCRA Ponds. The post-closure plan for Pond 16S will be modified first, followed by the other post-closure plans. The modifications will include changes to monitoring requirements and required response actions necessary to protect human health and the environment.

On April 16, 2010, FMC began gas extraction and treatment from the perimeter piping system (perforated pipe around the perimeter of the cap, directly under the liner) at Pond 15S using two 55-gallon gas extraction system (GES) units containing activated carbon. On April 26, 2010, FMC reported that they were also building two additional GES units to be deployed at Pond 15S if needed.¹⁰ FMC also reported that they were

⁹ Email from Mark Masarik to Jim Sieverson, dated August 16, 2007.

¹⁰ FMC Report on Phosphine at FMC Pond 15S, FMC Corporation, April 26, 2010.

extending the downwind fence line ambient air monitoring (required under the Pond 16S Order) to monitor for potential releases from Pond 15S.

On May 7, 2010, FMC reported that gas concentrations in Pond 15S were lower since deployment of the GES units.¹¹ FMC also described actions they were taking to mitigate releases from lift station (LS-01) that they believed were the source of high concentrations in ambient air. These actions included piling soil around an above-ground joint at LS-01.

On May 10, 2010, EPA sent FMC a CERCLA 104(e)/RCRA 3007 information request, requiring FMC to provide all sampling, monitoring and testing data related to phosphine or other hazardous gasses at or around the RCRA Ponds or other locations where phosphorus containing waste has been placed (excluding data already provided for Pond 16S), and requesting that FMC provide all data, information and calculations they used to determine that phosphine releases site-wide were less than the CERCLA reportable quantity. The information request required a response within 7 calendar days, and the complete response has not yet been received. FMC has requested an extension.

On May 13, 2010, FMC provided a draft Site-Wide PH3 Sampling Approach Summary¹² that describes a proposed approach to monitoring for phosphine in air and in soil gas for both the CERCLA Remediation Areas and at RCRA Ponds. EPA is currently reviewing the proposal.

C. State and Local Authorities' Roles

1. State and local actions to date

The RCRA Ponds are within the outer boundaries of the Fort Hall Reservation. EPA is consulting and coordinating with the Shoshone Bannock Tribes regarding this action. The Tribes and Idaho Department of Environmental Quality (DEQ) participated in a technical meeting with FMC and EPA on April 27, 2010, concerning the situation at Pond 15S. On May 7, 2010, EPA sent a letter to the Tribes informing them of EPA's intent to issue a CERCLA Order to address Pond 15S and providing them an opportunity to review a draft Order. The Tribes have been provided with an opportunity to review the draft Order and will be provided an opportunity to review plans and other deliverables from FMC.

2. Potential for continued State/local response

EPA has committed to consulting and coordinating with the Tribes on the proposed action described herein. The Tribes have expressed an interest and intent regarding continued engagement with EPA at the Site.

¹¹ Email from Barbara Ritchie to Carla Fisher, with attachments, dated May 7, 2010.

¹² Email from Marc Bowman to Kira Lynch, with attachments, dated May 13, 2010.

Idaho DEQ, while not engaged through its regulatory programs at the Site, has technical expertise and has offered to assist in reviewing plans and other technical deliverables from FMC.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

Conditions at the Site meet the criteria for a time-critical removal action as stated in the National Contingency Plan (NCP), 40 CFR Section 300.415, as follows:

1. Actual or potential exposure to hazardous substance or pollutants or contaminants by nearby populations or the food chain (300.415(b)(2)(i)). The Idaho Department of Health and Welfare, Bureau of Community and Environmental Health (BCEH), ATSDR Cooperative Agreement Program, completed an evaluation of the air monitoring data for the Pond 15S area provided to EPA by FMC on April 26, 2010.¹³ In a letter dated June 2, 2010¹⁴, BCEH concluded that the phosphine gas being released from Pond 15S can be expected to cause harm to people breathing the air on the Site in proximity of Pond 15S, including workers and visitors to the Site. The BCEH letter does not specifically address other RCRA Ponds, but the letter does state it is possible that other RCRA ponds in the pond area at the site could release phosphine in the future. High concentrations of phosphine gas have been detected in the air outside of Ponds 8E and 17 that also present a human health threat.

Inhalation is the most likely route of exposure to phosphine. Acute effects resulting from short-term inhalation exposures to concentrations above 2 ppm include lung irritation, cough and chest tightness, nausea, vomiting, abdominal pain, dizziness, lethargy and convulsions. Edema (fluid on the lungs) and liver and kidney toxicity can follow but is usually delayed. Chronic effects resulting from long-term exposure to concentrations in the range of 0.5 to 1 ppm include bronchitis, gastrointestinal distress, neurological effects, and anemia. In some cases jaw swelling and bone deterioration can develop causing increased risk for bone fracture. Liver and kidney toxicity can develop over time, as well as chemical-induced asthma.

Industrial hygiene sampling using real-time area air monitors at the lift station (LS) area just north of Pond 15S indicated that concentrations of phosphine gas were highly variable and frequently above levels known to cause harm to humans. Monitoring was conducted generally 3-4 times per 24-hour period at approximately 4 to 6 hour intervals. The phosphine monitoring instrument's maximum detection level of 20 ppm was routinely exceeded. During the month of April 2010, the median phosphine concentration at the LS area monitor was 3.4 ppm, and the mean was 5.6 ppm. However, since the instrument that measures the phosphine levels only goes to 20 ppm and five of the readings used to calculate the median and mean were reported to be 20 ppm or

¹³ FMC Report on Phosphine at FMC Pond 15S, FMC Corporation, April 26, 2010.

¹⁴ Letter Health Consultation, Phosphine Gas and Human Exposures and Pond 15S, FMC Site, prepared by Idaho Department of Health and Welfare, June 2, 2010.

greater, it is very possible that the real median and mean are much higher. Also, these industrial hygiene samples may not represent the highest possible exposure levels as they were taken at just one of the suspected leak sources from the pond. Estimated phosphine concentrations under the Pond 15S cap range from approximately 20,000 to 100,000 ppm.

While access to Pond 15S and the other RCRA ponds at the Site is controlled by FMC via two chain link fences with locked gates, employees of FMC and their contractor personnel access these areas on a regular basis for maintenance and monitoring activities. Concentrations of phosphine have been measured in excess of 20 ppm in areas where workers are present. It is possible that the NIOSH IDLH level is being exceeded in areas where workers are present, especially given the highly variable phosphine concentrations, the potential for shifting wind directions, and the fact that phosphine gas, being heavier than air, tends to accumulate in low places. Monitoring similar to that conducted to date at Pond 15S has not yet been conducted at the other RCRA ponds. Phosphine gas that presents a potential for exposure to site workers, visitors or trespassers is also being released from Ponds 8E and 17, where concentrations immediately outside the TMP enclosures has exceeded 1 ppm on several occasions.

2. High levels of hazardous substances or pollutants in soils largely at or near the surface that may migrate (300.415(b)(2)(iv)). None of the RCRA Ponds is designed to be gas tight. All of the ponds have a gap between the pond liner anchor trench and the cap HDPE liner anchor trench. FMC has concluded that phosphine gas was migrating through subsurface soils at Pond 15S in this gap between the pond liner anchor trench and the cap HDPE line anchor trench, where it was entering the a drainpipe to the LS-01 lift station causing high concentrations in the lift station and surrounding area.¹⁵ Soil gas monitoring conducted in the shallow subsurface soils around the perimeter of Pond 16S, as required under the CERCLA Order, has similarly shown that high concentrations of phosphine gas under the RCRA evapotranspiration cap can migrate through soils and escape from under the cap at the perimeter.

3. Threat of fire or explosion (300.415(b)(2)(vi)). Phosphine is very flammable (NFPA rating = 4) and highly reactive. Phosphine will auto-ignite in air (with no outside ignition source) at concentrations around 20,000 ppm at normal atmospheric temperatures. Accumulations of phosphine gas at the Site, whether in low places or confined or enclosed areas, present a fire and explosion threat if there is an ignition source or if it accumulates to such a concentration that it exceeds its auto-ignition threshold.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substance from this Site may present an imminent and substantial endangerment to public health or welfare or the environment.

¹⁵ FMC Report on Phosphine at FMC Pond 15S, FMC Corporation, April 26, 2010.

V. PROPOSED ACTION AND ESTIMATED COSTS

A. Proposed Actions

1. Proposed Action Description

The proposed removal action is anticipated to be implemented by FMC, pursuant to a CERCLA 106(a) Unilateral Administrative Order ("Order"), and in accordance with an EPA-developed Statement of Work that will be attached to the Order. The proposed removal action incorporates the basic framework and lessons learned from work completed at Pond 16S under a previous Order. The removal action at 16S has so far been successful at safely reducing very high concentrations of phosphine gas to levels that are protective of public health and the environment.

The proposed action will require FMC to design and operate a gas extraction and treatment system at Ponds 8E, 15S and 17. It will also require FMC to develop and implement a plan to monitor the air for releases at the RCRA ponds and at the facility boundary, and will require gas extraction and treatment at RCRA ponds other than 8E, 15S and 17 if air monitoring results show that they are releasing phosphine gas at or above 1.0 ppm and EPA determines that such action is necessary to protect public health and welfare and the environment, or EPA otherwise determines that such action is necessary to protect public health and welfare and the environment.

The gas extraction and treatment systems must be designed and operated such that the phosphine concentration from any discharge point, including the treatment system exhaust, TMPs, and any other discharge points in the system, does not exceed levels that are protective of human health and the environment, including site workers and visitors. Discharge point(s) for the systems must be designed using best engineering practices to protect on site workers and visitors from exposure to toxic gases. Additionally, treatment system construction, maintenance and repair procedures must be planned and conducted using best engineering practices to protect on site workers and visitors from exposure to toxic gases and to minimize the discharge of gases to the environment. The gas extraction and treatment systems must be designed so system malfunction or failure are detected and addressed in a timely manner. The system design and work plan must provide for a monitoring and sampling/analysis plan that will include periodic monitoring and sample collection and analysis sufficient to demonstrate compliance with the performance objectives.

For a period of one year, concentrations of phosphine released to the air by the pond must not exceed 1.0 ppm, and phosphine concentrations under the pond cap must be sustained at or below 10% of the lower explosive limit (LEL)

Post-removal site control after successful completion of the one-year demonstration period described above will be accomplished through implementation of the appropriate RCRA post-closure plan. EPA has initiated the process of revising

existing post-closure plans at the various RCRA ponds to incorporate sufficient post removal site control requirements.

Additionally, an Air Monitoring Plan must be implemented to monitor air at RCRA Ponds and at the facility boundary for phosphine releases from the Site and ensure the protection of human health and the environment at all times. The Air Monitoring Plan will describe a program for periodic monitoring of the RCRA Ponds for releases of phosphine to air, which includes monitoring of the cap surface, cap perimeter and around any cap appurtenances where phosphine could accumulate or that could provide a preferential pathway for phosphine release from under the cap.

2. Contribution to remedial performance

The purpose of the proposed time-critical removal action is to reduce high concentrations of phosphine gas that have built up beneath RCRA ponds at the Site and are being released or presenting a threat of release to the environment, such that remaining concentrations of gas are at levels that are sustainable and do not present an imminent and substantial endangerment to public health. This short-term action is consistent with the approved RCRA closure and post closure plans, and any other likely long-term action, either under RCRA or under CERCLA, that may be needed to address any continued generation of phosphine within the RCRA Ponds at the Site.

3. Engineering Evaluation/Cost Analysis (EE/CA)

This proposed action is for time-critical removal action, and an EE/CA is therefore not required.

4. Applicable or relevant and appropriate requirements (ARARs)

The NCP requires that removal actions attain ARARs under federal or state environmental or facility siting laws to the extent practicable, considering the exigencies of the situation. The proposed removal action will attain or exceed ARARs to the extent practicable. ARARs which have been identified or otherwise considered for this removal action include those summarized below.

RCRA, 42 U.S.C. Parts 6901 et seq., and its implementing regulations codified in Parts 260 through 265, and 268 of the Code of Federal Regulations (CFR), including but not limited to the following specific requirements identified at this time:

1. 40 CFR Parts 261.10 and 261.24, relating to characteristics of hazardous wastes including the toxicity characteristic;
2. 40 CFR Part 262.11, relating to hazardous waste determinations;
3. 40 CFR Part 265.17, relating to management of ignitable, reactive, or incompatible wastes;
4. 40 CFR Parts 262.20, 262.21, 262.22, 262.23, 262.30, 262.31, 262.32, and 262.34, relating to hazardous waste accumulation, manifesting and labeling requirements prior to transportation of hazardous waste off-site;

5. 40 CFR parts 263.20 and 263.21, relating to off-site transport of hazardous waste (handling and manifesting requirements);
6. 40 CFR Part 268, relating to off-site and on-site land disposal restrictions for hazardous wastes;
7. 40 CFR Part 300.440, relating to the CERCLA "Off-Site Rule."

Clean Air Act as Amended (CAA), 42 U.S.C. 7401 et seq., and its implementing regulations codified in Title 40, Part 49 of the CFR including, but not limited to, the following specific requirements identified at this time:

1. 49.124, relating to visible air emissions;
2. 49.125, relating to particulate matter emissions;
3. 49.126, relating to fugitive particulate matter emissions.

5. Project schedule

It is expected that project implementation will begin in June 2010. The project will take a minimum of one year to complete, depending on the number of RCRA Ponds that require gas extraction and treatment and the concentration and volume of gas to be extracted. Because this proposed action is anticipated to be conducted by the responsible parties under a CERCLA Order, it is therefore not subject to the 12-month statutory limit on removal actions.

B. Estimated Costs

It is anticipated that the work described for this proposed time-critical removal action will be implemented by FMC and their contractor personnel, under a CERCLA Section 106(a) Administrative Order that EPA expects to issue. EPA estimated costs per this Action Memorandum are anticipated only for costs associated with oversight and implementation of the work under the Order performed by FMC. This work includes, but is not limited to, review and development of comments on required deliverables, field oversight of work plan implementation, and other EPA responsibilities with respect to Order implementation. If EPA were to undertake implementation of the work described in this Action Memorandum with its own resources, an Action Memorandum Amendment and Cost Ceiling Increase would be required.

Regional Removal Allowance Costs:

| | |
|----------------------|-----------|
| Technical Assistance | \$ 40,000 |
|----------------------|-----------|

Other Extramural Costs not from the Regional Allowance:

| | |
|------------------|-----------|
| START contractor | \$100,000 |
|------------------|-----------|

| | |
|---------------------------|-----------|
| Subtotal Extramural Costs | \$140,000 |
|---------------------------|-----------|

| | |
|-----------------------------------|-----------|
| Extramural Cost Contingency (20%) | \$ 28,000 |
|-----------------------------------|-----------|

| | |
|--------------------------------------|-----------|
| TOTAL REMOVAL ACTION PROJECT CEILING | \$168,000 |
|--------------------------------------|-----------|

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

If the proposed removal action is not implemented, high concentrations of phosphine may continue to accumulate within RCRA Ponds, including Pond 15S, where it could be released or present a threat of released. Such releases, if not addressed by the proposed removal action, may present an imminent and substantial endangerment to site workers, visitors, and others at the Site.

VII. OUTSTANDING POLICY ISSUES

The recommended removal action requires actions to be taken at RCRA-managed hazardous waste units which are subject to RCRA post closure plans. The removal is not expected to conflict with RCRA post closure requirements.

VIII. ENFORCEMENT

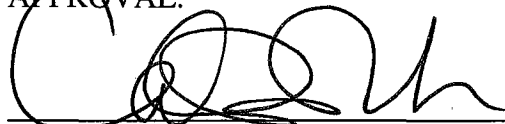
See the Confidential Enforcement Addendum.

IX. RECOMMENDATION

This decision document represents the selected removal action for the FMC Ponds Site, in Power County, Idaho, developed in accordance with CERCLA as amended, and is not inconsistent with the NCP. This decision is based on available documents and information on the RCRA Ponds which will be placed in the administrative record for this removal action.

Conditions at the Site meet the NCP section 300.415(b)(2) criteria for removal action and I recommend your approval of the proposed action. The total project ceiling for EPA costs, if approved, will be \$168,000. Of this amount, \$40,000 comes from the Regional removal allowance.

APPROVAL:



for Daniel D. Opalski, Director
Office of Environmental Cleanup

6/11/10

Date

DISAPPROVAL:

Daniel D. Opalski, Director
Office of Environmental Cleanup

Date

Attachments:

Figure 1 – Layout of RCRA Ponds

Figure 2 – Regional Setting

Figure 3 – Description of RCRA Ponds

Confidential Enforcement Addendum

Figure 1
Layout of RCRA Ponds

RCRA Ponds

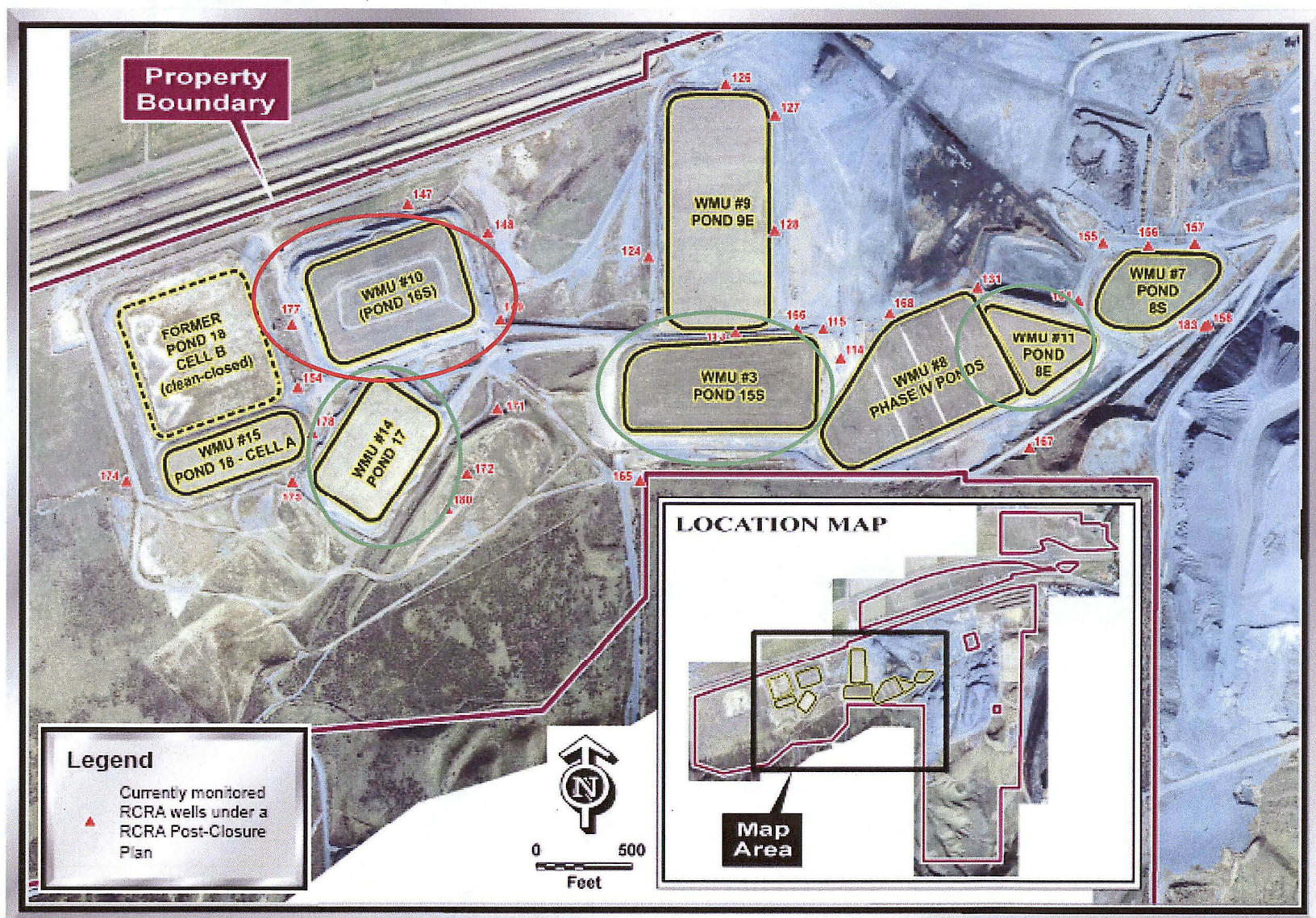


Figure 2

Regional Setting

REGIONAL SETTING

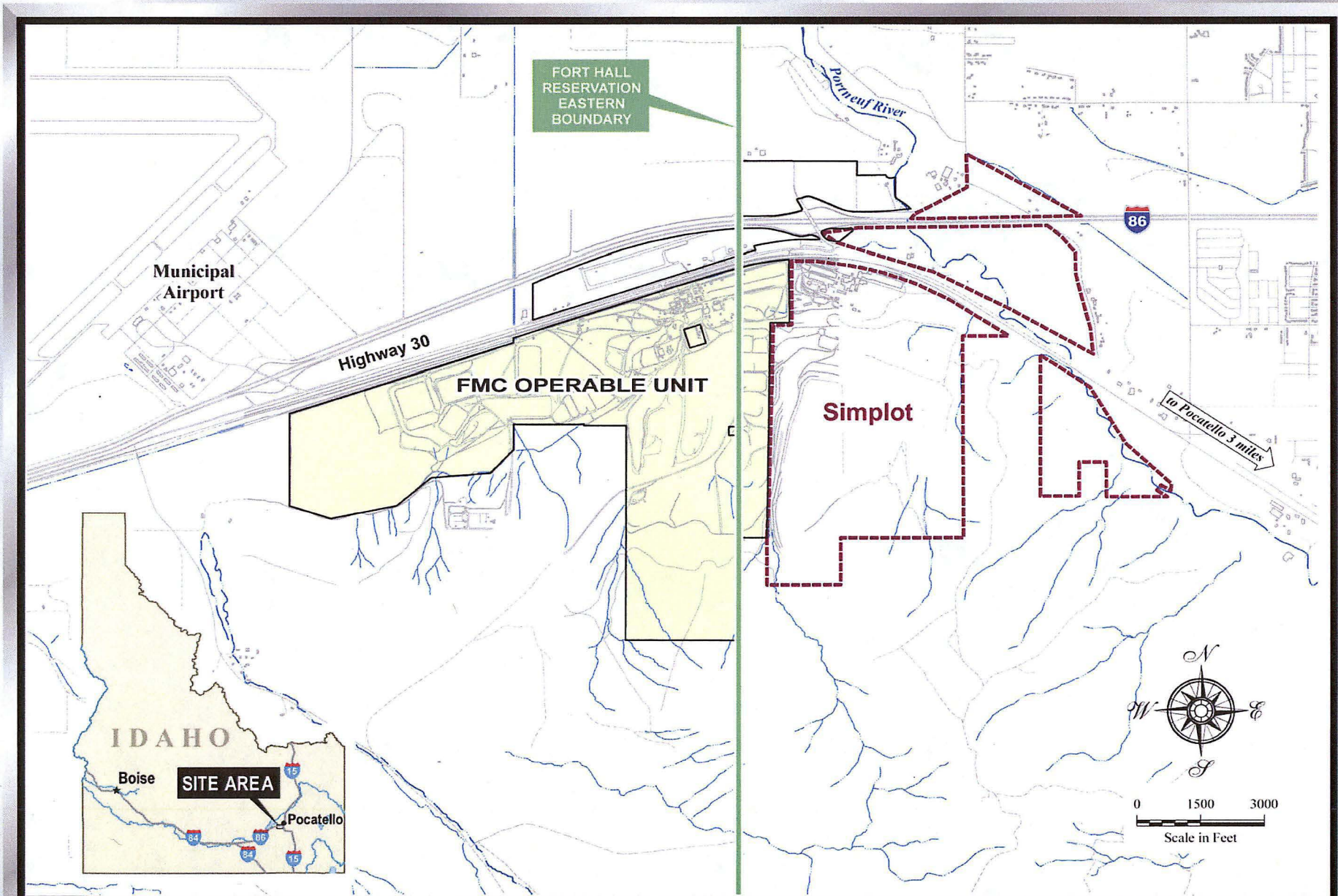


Figure 3

Description of RCRA Ponds

TABLE 3.0
DESCRIPTION OF RCRA PONDS (Excluding Pond 16S)
FMC Corporation, Pocatello, Idaho
(Page 1 of 1)

| Pond Number | Description of Wastes Received | Year In Service | Pond Size (acres) | Estimated Total Fill at Closure (acre-feet) | Closure Certification | Cap Design Type # of TMPs # of ET Cap Drainage Sumps # of LCDRS Collection Sumps |
|--------------|---|-----------------|-------------------|--|-----------------------|---|
| 8E | Primarily NOSAP (lime-treated) precipitator slurry and residual non-lime treated precipitator slurry/phosy solids | 1984 – 1997 | 4.1 | 27 | January 2005 | RCRA engineered cap ¹ TMPs = 4 ET Cap Drainage Sumps = 0 LCDRS Sumps = 1 |
| 9E | Precipitator slurry | 1986 – 1994 | 12.9 | 17 | January 2001 | RCRA engineered cap ¹ TMPs = 10 ET Cap Drainage Sumps = 0 LCDRS Sumps = 6 |
| 8S | Phosy water and phosy solids | 1970 - 1981 | 3.2 | 44 | December 1999 | RCRA double cap ² TMPs = 4 ET Cap Drainage Sumps = 2 LCDRS Sumps = 0 |
| Phase IV | Phosy water and phosy solids | 1980 – 1998 | 8.9 | Pond 11S = 19 Pond 12S = 19 Pond 13S = 3.8 Pond 14S = 1.5 | January 2005 | RCRA double cap ² TMPs = 13 ET Cap Drainage Sumps = 4 LCDRS Sumps = 0 |
| 15S | Phosy water and phosy solids | 1982 – 1993 | 9.4 | 140 | January 2005 | RCRA double cap ² TMPs = 10 ET Cap Drainage Sumps = 2 LCDRS Sumps = 4 |
| 17 | RCRA Consent Decree on-specification NOSAP slurry only | 1998 – 2001 | 9.0 | 59 | December 2005 | RCRA engineered cap ¹ TMPs = 6 ET Cap Drainage Sumps = 0 LCDRS Sumps = 1 |
| 18 Cell A | Phosy water and phosy solids, minor RCRA Consent Decree off-specification NOSAP slurry | 1998 - 2001 | 3.8 | 25 | December 2005 | RCRA double cap ² TMPs = 3 ET Cap Drainage Sumps = 2 LCDRS Sumps = 1 |

¹ RCRA engineered cap does not have an ET cap.

² RCRA double cap does have an ET cap.